

What is claimed is:

1. A two-way valve comprising:

5 a body in which a fluid passage for flowing a fluid is formed;

a piston which is provided in said body displaceably in an axial direction by a pilot pressure;

a shaft which is integrally connected to said piston;

10 a first diaphragm which is connected to one end of said shaft and which closes said fluid passage when said first diaphragm is seated on a valve seat formed on said body; and

15 a second diaphragm which is axially attached so that said second diaphragm is coaxially superimposed on said first diaphragm and which is provided displaceably together with said first diaphragm,

wherein a space is formed between a first skirt section of said first diaphragm extending radially outwardly and a second skirt section of said second diaphragm extending radially outwardly.

20 2. The two-way valve according to claim 1, wherein an elastic member is arranged in said space, said elastic member urges said first skirt section and said second skirt section to separate from each other.

25 3. The two-way valve according to claim 2, wherein said elastic member comprises a buffering spring member

which is corrugated in a direction from an inner circumferential side to an outer circumferential side of said first diaphragm and said second diaphragm.

5           4.    The two-way valve according to claim 3, wherein said buffering spring member is formed of the same resin material as a resin material of the first diaphragm and the second diaphragm.

10           5.    The two-way valve according to claim 3, wherein a corrugated portion of said buffering spring member is interposed between said first diaphragm and said second diaphragm so that said portion contacts a wall surface of said first diaphragm and a wall surface of said second  
15   diaphragm.

          6.    The two-way valve according to claim 1, wherein said body is provided with a detecting section which detects a pressure value of said fluid when said fluid, which flows  
20   through said fluid passage, leaks out.

          7.    The two-way valve according to claim 6, wherein said body is formed with a connecting port which is communicated with said detecting section, and a check valve  
25   is provided in said connecting port, said check valve is displaceable by pressure of said fluid discharged from said body.

8. The two-way valve according to claim 1, wherein said second diaphragm is retained by a holding section of a holding member which is axially attached to said shaft, said holding section is expanded radially outwardly.

9. The two-way valve according to claim 1, further comprising a housing which is connected to an upper portion of said body, and a spring made of metal disposed in a chamber which is formed between said housing and said piston provided displaceably in said housing, wherein said spring urges said first diaphragm in a direction to be seated on said valve seat.

10. The two-way valve according to claim 9, wherein a connecting member is installed to said chamber and is connected to a nitrogen gas supply source, nitrogen gas is supplied into said chamber via said connecting member.

11. The two-way valve according to claim 1, wherein a chemical solution for washing semiconductor chips flows through said fluid passage.